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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/746,113	12/21/2000	Hui Wang	3375	2203

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AFFYMETRIX, INC
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EXAMINER

SIÊU, JEFFREY

ART UNIT	PAPER NUMBER
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1637

DATE MAILED: 09/10/2003

19

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/746,113

Applicant(s)

WANG ET AL.

Examiner

Jeffrey Siew

Art Unit

1637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☒ Claim(s) 28 & 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. In claims 28 & 29 the repetitive recitation of "claim 11" is unnecessary and awkward. Correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 22-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A) Claims 22-25 are indefinite because it is unclear as to how the steps which now involved with ddNTP would result in multiple base extension. The incorporation of ddNTP would result in a mix of results which also include single base extension products.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-5, 31 are rejected under 35 U.S.C. 102(a) as being anticipated by Weidenhammer et al (US6,379,897 April 30, 2002).

Weidenhammer teach a method of detecting different RNAs in a sample comprising hybridizing the sample with microarray substrate wherein in substrate has plurality of different immobilized probes for primer extension, synthesizing primer extension products with nucleic acid polymerase, appropriate reagents and conditions and detecting extension products to determine level of different RNAs(see entire doc. esp. col. 14 line 16-46 & col. 1 lines 45-55). They teach probes immobilized in 5'-3; direction (see col. 12 lines 27-34). They teach detecting at least 100 RNAs(see col. 9 line 14). They teach using a label (see col 14 line 39). They detect

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1637

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 6- 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weidenhammer et al (US6,379,897 April 30, 2002) in view of Heller et al (US5,605,662 Feb 25, 1992).

The teachings of Weidenhammer et al are described previously.

Weidenhammer do not explicitly teach synthesis of probes.

Heller et al teach synthesis of probes on substrate within the microlocations of size 50um by 50 um (see col. 12 line 20 & see col. 21 lines 1-43).

One of ordinary skill in the art at the time the invention was made would have been motivated to apply Heller et al's synthesis method to Weidenhammer array in order to construct probes. Weidenhammer et al states that Heller et al's teachings of immobilizing probes would apply to their array (see col.12 line 28). Heller et al then states that combinatorial synthesis allows very large numbers of sequences to be synthesized on device (see col. 20 line 60-62). It would have been prima facie obvious to apply Heller et al's synthesis method to Weidenhammer et al's array in order to produce a large number of probes within the microlocations of the microarray.

Art Unit: 1637

Moreover it would have been prima facie to increase the number of probes within the microlocation to detect greater number of different RNA targets.

5. Claims 21-25 & 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weidenhammer et al (US6,379,897 April 30, 2002) in view of Heller et al (US5,605,662 Feb 25, 1992) in further view of Caskey et al (US6,153,379 Nov. 28, 2000)

The teachings and suggestions of Weidenhammer et al and Heller et al are described previously.

Weidenhammer et al do not teach ddNTP.

Caskey et al teach the use ddNTP for detecting SNPs (see whole doc. esp. col. 8). They also teach fragments(see col.2 line 26).

One of ordinary skill in the art would have been motivated to apply Caskey et al's ddNTPs to the combined invention of Weidenhammer et al and Tominaga et al method in order to detect different single nucleotide mutations. It would have been prima facie obvious to apply Caskey et al's ddNTPs to Weidenhammer et al's extension method in order to detect regions of alternations and changed bases.

6. Claims 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weidenhammer et al (US6,379,897 April 30, 2002) in view of Heller et al (US5,605,662 Feb 25, 1992) in further view of Chee et al (US5,837,832 Nov. 17, 1998)

The teachings and suggestions of Weidenhammer et al and Heller et al are described previously.

Art Unit: 1637

Weidenhammer et al do not teach tiling.

Chee et al teach tiling (see whole document).

One of ordinary skill in the art would have been motivated to apply Chee et al's tiling technique to the combined invention of Weidenhammer and Heller et al in order to examine regions of genes. It would have been prima facie obvious to apply Chee et al's tiling to Weidenhammer et al's probes in order to detect sequence variation in exon boundaries.

SUMMARY

7. No claims allowed.


CONCLUSION

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Siew whose telephone number is (703) 305-3886 and whose e-mail address is Jeffrey.Siew@uspto.gov. However, the office cannot guarantee security through the e-mail system nor should official papers be transmitted through this route. The examiner is on flex-time schedule and can best be reached on weekdays from 6:30 a.m. to 3 p.m. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Gary Benzion, can be reached on (703)-308-1119.

Any inquiry of a general nature, matching or filed papers or relating to the status of this application or proceeding should be directed to the Tracey Johnson for Art Unit 1637 whose telephone number is (703)-305-2982.

Art Unit: 1637

Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Center numbers for Group 1600 are Voice (703) 308-3290 and FAX (703)-308-4242.


JEFFREY SIEW
PRIMARY EXAMINER

September 7, 2003